Teaching Study Habits and Skills

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Introduction

Study is the process of acquiring knowledge and understanding by one's own efforts. Study thus defined is one of the chief requirements for a rewarding intellectual life, both during and after one's period of schooling.

Most people do not study very efficiently. Many adopt a makeshift system of study and cling to it even when it fails to yield much success or satisfaction. They often think there is no other way. Others lack even a makeshift system of study. They try this way and that, ever groping.

Those who study inefficiently, whether with or without a plan, see others surpass them in school or in the workaday world and conclude, often quite wrongly, that their own mental capacities are low. They seldom diagnose their difficulty with any accuracy. Thus, they frequently attribute it to slow reading, which is normally only a secondary factor. Although in most instances they do read slowly, this slowness usually turns out, upon investigation by a clinical specialist, to be merely a symptom of an unsystematic and disorganized approach to study—not the cause of their failures.

This pamphlet is concerned with the problem of how teachers can help young people from early childhood through college to develop four crucial requirements of study:

1. Interest in learning
2. Self-discipline in study
3. Skill in gathering and assimilating information
4. A good memory for mastering material studied

These four fundamentals of study are closely related. They are not learned in the above sequence. The individual learns something about each of them at each stage of his development—or he should. However, during the preschool and kindergarten period, appropriateness and economy of learning call for special emphasis upon the first two requirements—interest in learning, and self-discipline; and during the high school and college period, upon the third and fourth requirements—carrying out assignments and remembering. Needless to add, if the child's early years have been wasted so far as the development of study qualities is concerned, then the neglected areas will need to receive prior and heavy emphasis at the later periods. Fortunately, it is never too late to form good study habits and skills. If their nurture has been neglected until high school or college years, there is still time to learn how to study—although the difficulties for both teacher and student are augmented many fold, and the chances of complete success in an individual case are imperiled. The experience of reading clinics shows that even as late as the college years many students who are threatened with failure can be salvaged after a fashion—the quality of their work may be improved, ability to carry out their assignments more quickly may be acquired, and anxiety about their college work may be lessened.

Nevertheless, such postponement of attention to study skills should never be recommended. The early years of life in the formation of productive students are of critical importance. This pamphlet, accordingly, will give considerable emphasis to the prereading period—a period generally overlooked in discussions of study techniques. It is during these early years, that, in a real sense, an individual's later progress as a student is eased or blocked. Educators tend to concentrate upon removing the handicaps of the academic cripple after he reaches high school or college, instead of seeking to prevent the disablement in the first place. And parents tend to blame the schools for certain academic deficiencies in their children which can often more properly be laid at their own doorstep.

The acquisition of study skills should not be left to chance, any more than the acquisition of such basic skills as reading and arithmetic. If all parents and teachers were to assume their respective responsibilities in improving study procedures, the intellectual climate of our homes, schools, and nation would be appreciably improved.

1

Developing Interest in Learning

As a result of their experiences with reluctant learners, teachers are often reminded of the proverb that a horse may be brought to water but cannot be made to drink. Again and again every teacher faces the experience of bringing a class to the very edge of intellectual adventure, only to find that certain pupils—sometimes the majority—merely look at it and, at the first opportunity, turn away.

From earliest times, many procedures have been recommended and tried in an effort to ensure that the pupil will drink of the waters of learning. In the earliest known schools, four thousand years ago in ancient Sumer, the cane was applied. Although this manner of forcing study has always had it advocates (Dr. Sam Johnson declared, "My schoolmaster beat me most unmercifully, else I had done nothing"), it has also always had its critics. Plato believed that "knowledge which is acquired under compulsion has no hold on the mind." Spencer wrote, "The most that severity can do is to make hypocrites; it can never make converts."

Less drastic forms of goading than the laying on of hands have also been tried. Elaborate systems of merits and demerits, marks, gold stars, honor rolls, detention, and probation have been established by schools. Such devices are effective with certain learners. Lured by prospects of an award or avoidance of penalty or punishment, they apply themselves and wind up by discovering that they actually enjoy studying, and they make a lifelong habit of it. Unfortunately, for every person who responds in this way, there are probably some nine who do not. Most of these nine, awed by the reward-and-punishment system, drive themselves to study after a fashion; but the motivation is temporary and superficial, and the external conformity is unaccompanied by any kind of profound inner development. They learn to "adjust" to the system, or how to "beat it" in an emergency, but they seldom come to love learning so that it carries over into their later lives in a meaningful or sustaining way. The ineffectiveness of traditional systems of inducing pupils to study or to love learning is seen in Gallup poll findings, which reveal the deplorable facts that only one in two college graduates could name a book he looked forward to reading, and that considerably fewer than half of them were then reading books. Other evidence, too, indicates that our schools and colleges are turning out a low proportion of graduates who are truly studious, i.e., who are interested in continuing to inform themselves and to increase their understanding and appreciation of the world.[1]

The secret of turning children into students lies in the ability of parents and teachers to throw doors open to fresh ideas and broader perspectives, to sustain and build on the natural curiosity of the very young, and to arouse in children the desire for deeper inquiry. All this calls for inspired adults whose enthusiasm for learning and study is contagious.

Why aren't students being produced today on a large scale, especially in view of the throng of young people clamoring for admission to colleges? No one can answer this question with precision, but some of the inhibitive factors are well known. For one thing, many parents and teachers are either maudlin in their approach to children—indulging them and failing to challenge them—or they have little more to offer than a hackneyed, uninspired routine. Teachers guilty of the latter are particularly common in our high schools and colleges. They sometimes defend their pedestrian approach to teaching by reasoning that, since scholarship requires a strict regimen, subjecting the learner to that regimen will produce a scholar. However, a disciplined atmosphere is not likely to create a scholar when the pupil has no desire to learn, any more than sunshine will grow grapes when there is no vitality in the vine. If we hope to develop greater earnestness in our students, we must have more parents and teachers who by their own enthusiasm develop in students what Alfred North Whitehead called the "atmosphere of excitement," in which "a fact is no longer a bare fact: it is invested with all its possibilities. It is no longer a burden on the memory: it is energizing as the poet of our dreams, and as the architect of our purposes."[2]

It should be evident from the foregoing that creating interest in learning depends largely upon the teacher's ability to transmit his own interest to the learner—it has little to do with devices for "making" a subject interesting or sugar-coating learning. Interest is the first ingredient of effective study. Precisely what this means at the various educational levels will now be taken up.

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[1] See, for example, Philip E. Jacob, *Changing Values in College* (New Haven, Conn.: Edward W. Hazen Foundation, 1956); and James M. Gillespie and Gordon W. Allport, *Youth's Outlook on the Future* (New York: Doubleday & Company, 1955).

[2] Alfred North Whitehead, *The Aims of Education and Other Essays* (New York: The Macmillan Company, 1929), p. 139.

INTERESTING THE PRESCHOOL AND KINDERGARTEN CHILD

Expand the world of childhood

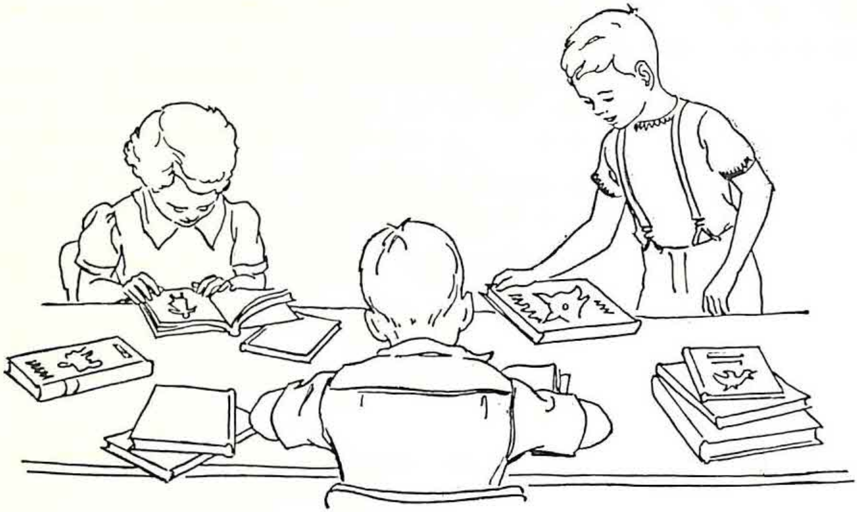
Teachers of nursery school and kindergarten have an unmatched opportunity to stimulate children's intellectual life. One obvious means is to take children on excursions in the neighborhood to see its stores, parks, and workaday activities; to show them nearby farms, rivers, skyscrapers. "Take them" is probably a poor phrase. Simply having children accompany you will probably do little to arouse their interest in the world about them. The excursion should be planned with the youngsters ahead of time and undertaken in the spirit of adventure and wonder. The adult must consciously help the child see the teeming world and interpret it. At first that world strikes the child as chaotic and overwhelming. But with a little help he gradually sees its order: differences between diverse buildings and their purposes; the uniqueness which sets off one store from others, one machine from others, one neighborhood from others; relationships between the various products of a dairy or a food store, between street vehicles, between man and his tools. Nature's order should be included: the rhythm of the seasons, sun and moon, clouds and rain, and common varieties of birds, trees, wild flowers, and insects. To help synthesize and consolidate the fragments of the trip, each excursion should be followed by thoughtful discussion and sometimes by dramatic play and art experiences.

Provide experiences with books

The teacher should introduce his class to the world of books. A browsing table piled with books should be in the classroom, and the titles should be changed frequently. Periods for exploring books should be scheduled even at this prereading age. Teachers should read to their pupils and take them to a library to browse among the children's collection, and should urge the parents of their pupils to do so, too. They should also point out to the parents the desirability of keeping the home stocked with books, and the advantages accruing to the child who is accustomed to seeing older siblings and parents search out a book on the shelves and retire to a quiet spot to browse or read, and who is accustomed to hear book-talk among the topics of dinner conversation.

Pursue children's questions judiciously

The questions of young children flow easily and spontaneously and offer further opportunity to develop a love of learning. They normally



Periods for exploring books should be scheduled even at the pre-reading age.

cover a wide expanse of subjects. "Do all fathers work in an office?" "What do the insides of people look like?" "How many people live in that house?" "What does 'prob'ly' mean?" "Why are train engines black?" And thus their questions may run. Some are readily answered, others are stumpers. Whatever their nature, simple answers from adults, free of sentimentality, ridicule, annoyance, and condescension, can help children develop their intellectual lives and mentally arrange some of the details of their environment in orderly fashion.

Sometimes teachers think a child needs encyclopedic answers to his questions. Seldom is this the case. One little girl, in cutting a doll blanket from a large cotton rag, asked her father how cloth is made. With the best intentions, he proceeded to explain the entire process, from the cotton boll to carding, spinning, and weaving. He realized, before his wordy explanation was over, that the child had turned to other thoughts and was no longer listening. Answers that are above a child's head introduce misconceptions and confusion. A child can acquire only a few concepts at a time. Beyond these, he becomes bored. This negative reaction is the greatest objection to the teacher's overeagerness to impart all he knows in answer to a question. To avoid being similarly bored by an unintelligible answer in the future, the child may keep his questions to himself or ask them of his uninformed playmates.

The point here is that cramming a child's mind with facts does not induce growth. Only a few ideas can be digested at a time. Hence, knowledge comes slowly. In responding to children's questions, we should aim at simplicity—a simplicity that will match the simplicity with which the question is usually asked.

The following excerpts are from conversations that actually took place. Although the adult answers are probably not models of perfection, they do show that it is possible to answer with simplicity, lucidity, and explicitness.

CHILD: How do TV pictures get to our house?
ADULT: They travel through the air.

CHILD: Why does the moon sometimes look like a fat ball and sometimes skinny?
ADULT: We can't always see all of the part of it that has light on it.

CHILD: Where did Dorothy [the new baby] come from?
ADULT: She grew inside Mother.

When vague questions are asked it is worth while for the adult to help the child sharpen it, as in the following conversation:

CHILD: How big is the wind?
ADULT: Do you mean how fast does it blow?
CHILD: Yes. How fast is the wind right now?
ADULT: It is blowing about as fast as that bicycle is moving. Put up your hand and feel the wind.
CHILD: Whew!

At times it is desirable and practicable to encourage the questioner to try to figure out the answer to his own question, as in the following example.

CHILD: Why are there more people on the hot street than in the park?
ADULT: Why do you think?
CHILD: Is it because the people on the street have to go to work in the stores?
ADULT: Yes. This is a work day. Most grownups can't rest or play in the park today.

Other situations in which we should expect children to answer their own questions are mentioned on page 23.

We have seen that we can arouse the interest of the preschool child in learning by helping him explore and understand the world about him, by encouraging an interest in books, and by answering his questions wisely.

INTERESTING THE ELEMENTARY SCHOOL CHILD

We now turn our attention to channeling the interest of the elementary school child, i.e., the child who has in all probability learned to read. Although for some few this occurs before they enter elementary school, for most children it occurs during the second half of first grade or the first half of second grade. Some, to be sure, do not attain independent reading until still later. But whether he learns to read before or soon after he enters school, the child's attitude toward his studies during the first half-dozen years of independent reading is critical. Whereas the attitude toward learning at the outset of the school career is usually favorable, something happens to many children during the elementary grades that drains away much of the eagerness for intellectual adventure which they exhibited so strongly at first. Chancellor Samuel B. Gould of the University of California at Santa Barbara writes: "The tragedy of American education appears to be that the initial sense of wonder and the urge to explore, so characteristic in the young child, are lost in his secondary schooling."[3] Our success in arresting this decline in intellectual curiosity depends to a considerable extent upon our understanding of the factors which seem to contribute to it.

Plan an expansive curriculum

We must recognize, in the first place, that the school curriculum is narrow compared to a child's expansive curiosity. Anyone questioning this can inform himself by comparing a typical course of study with investigations of children's questions and interests, such as Baker's or Rudman's.[4] Even during a hobby jag, when the child seems preoccupied with a special subject, such as dolls, stamps, or the makes of cars, his interests continue to be diversified so that his few special interests are accompanied by a host of subsidiary interests.

The content offered in the classroom, on the other hand, often leaves out whole segments of life which at this period have particular significance for the child in the fields of science, social studies, and literature. What is offered in the primary grades is often not only narrow but actually insulting to his level of maturity—unchallenging and stereotyped during the first few grades, then suddenly shifting in the intermediate grades to a tiresome catalogue of cluttered information. The solution is an expanded and enriched curriculum. Such a curriculum requires more science, a social studies program of topics from a wider range of the social sciences than is currently drawn upon, and a literature program freed from the stultifying domination of standard school "readers."

[3] *Antioch Notes*, Vol. XXXIII, no. 2, October, 1955.

[4] Emily V. Baker, *Children's Questions and Their Implications for Planning the Curriculum* (New York: Bureau of Publications, Teachers College, Columbia University, 1945); Herbert C. Rudman, "The Informational Needs and Reading Interests of Children in Grades IV through VIII," *Elementary School Journal*, 55:502–512, May, 1955.

Enrich content with abundant detail

A second factor which adversely affects interest in schoolwork is the tendency on the part of teachers to "give out" generalizations and to press for their mastery without sufficient attention to the details which form their basis. No one, whether child or adult, can understand a generalization beyond his familiarity with the detailed facts upon which it is based. To be sure, facts are sometimes "dry," but this is only when they are isolated and catalogued. Actually, it is the facts which make a subject colorful and interesting, just as it is detail which makes a newspaper story colorful, or a novel, or a piece of gossip. It is the detail that enables the child to get a three-dimensional picture of how people live in a certain place, or how they lived at a certain time, or how a machine works, or how a pair of birds raises it young, or how *Tom Sawyer* came to be written. Educators must get over their bad habit of offering broad orientation studies which, as neatly expressed by Edgar Dale, "have been like the Powder River in Montana, a mile wide and a foot deep. They do not really orient and are quickly forgotten. Certain so-called broad courses have been unsuccessful because they have attempted to cover the ground rather than to uncover it."[5] Specific detail, like firsthand experience, gives a study its concreteness as well as its color and concreteness is especially important in the education of children because of their limited ability to deal with abstractions.

Children will profit from information which is *expanded,* as information in a news story is, much more than from information which is *compressed,* as in most textbooks and encyclopedias. Second-grade children who study the dairy should not be left with the generality that the milkman delivers dairy products to many people. That is too compressed. The child needs to know the details of a milkman's day—what time of day he begins, where he gets his truck, the kinds of dairy products he places in it, how he keeps his merchandise refrigerated, and the like.

Fourth-grade children who study their city should not be left with the vague generality that their city's location has helped make it an important industrial center. Such a generalization means little to them without specific documentation to invest it with life, viz.: Our city is located on a large river; it is in the North Temperate Zone; it is near coal and iron mines. These facts call for still more facts—the advantages (and disadvantages, too) of a city's being located on a river, and in the North Temperate Zone, what ways of life are found there, the advantages in having mineral resources nearby, and so forth.

Fifth-grade children who study pioneer life in the United States should not be given merely the generalization that the pioneer family worked long hours and had little leisure. That, too, is overly compressed. What is needed is detail about the daily regimen, the duties of the various members of the family, the sources of food, how meals were prepared, how messages were sent to friends and relatives in the eastern cities and in Europe, and the like. There is a tendency for teachers to become too dependent upon the compressed information of school textbooks, without expanding their content. The result is that the child's energies are exhausted through trying to assimilate so much predigested information, and the edge of his intellectual appetite is dulled. As a result of having so much of his natural curiosity frustrated in school, he tends to form unpleasant associations with learning.[6]

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[5] *The News Letter,* Ohio State University, (no. 7), 16:2 (April, 1951).

Rely chiefly upon natural means of motivation

A third factor in the dulling of intellectual curiosity is the practice of placing excessive emphasis on external rewards (gold stars, high marks, praise) and punishment (demerits, detention, low marks, threats). Such devices have their place in the reinforcement of learning, particularly where arbitrary associations have to be made, as in mastering the multiplication table and learning dates, but excessive reliance upon them causes learning to become an artificial situation. It suffocates natural motivation and, as experienced teachers know, "too great reliance on extrinsic motivation is perilous."[7] Whether or not the teacher works in a school that places emphasis upon marks and other rewards, he must still rely chiefly on his own enthusiasm and skill in presentation, supplemented by ideas gleaned from reading, from other teachers, and from graduate study, to develop his pupils' interest in the subject matter and the behavior to be learned.

In summary, a child's intellectual interests can be kept alive by diversifying the content of the curriculum, providing plenty of colorful detail to illustrate and clarify and make significant important principles, and by avoiding heavy reliance on formal rewards and punishments and other devices of artificial reinforcement that may dull the child's curiosity and interest in the subject matter itself.

MAINTAINING THE INTEREST OF HIGH SCHOOL AND COLLEGE STUDENTS

As we have seen, too few pupils reach high school and college with the intensity of interest in their studies which most of them had in first grade. They can still be motivated by a vital teacher, but it is not the comparatively easy task it was at the lower levels. High school and college youth have lost much of their earlier plasticity. Their attitudes are more fixed. They are less susceptible to adult influences.

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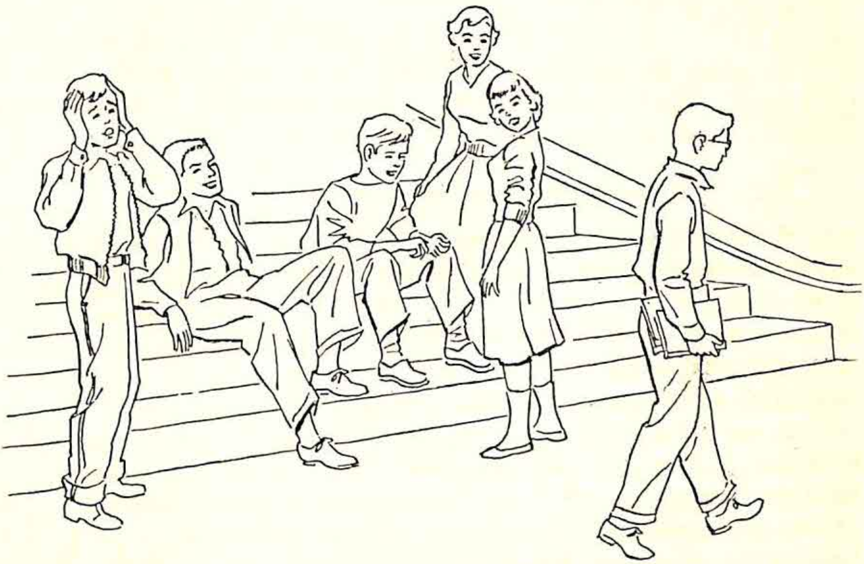
[6] See Daniel A. Prescott, *Emotion and the Educative Process* (Washington, D. C.: American Council on Education, 1938), pp. 236–237.

[7] Fritz Redl and William W. Wattenberg, *Mental Hygiene in Teaching*, p. 297. (New York: Harcourt, Brace and Company, 1951.)

For many students during this period, an acquired distaste for learning, or at least indifference to it, promotes a distorted ordering of values. They give low priority to school learning. In some student circles it is fashionable to try to cut corners on homework or even cheat. To betray a love for study is to be a "square," a characterization to be avoided at all costs. This kind of bravado is often an outward pose. Nevertheless, it is an obstacle to teachers.



The serious student is sometimes considered a "square."

Such attitudes can seriously imperil the student's future. A successful record at school is an essential for entering college, business, and many occupations. The demands of schoolwork are sharply stepped up during the high school and college years. The student must spend long periods of concentrated attention upon study assignments. Unless there is considerable drive on his part, he will fare poorly. What are the possible sources of this drive?

Use varied approaches

Drive, of course, stems from interest. Interest may reside in the subject itself. Or it may be in some desired goal, such as graduation, which requires that the subject be studied and passed. If there is interest in the subject per se, then there is naturally no problem. However, if the interest is indirect, as when the student is interested in passing the course only so that he can graduate, he may need help. To give this help is the responsibility of every teacher, regardless of his subject.

The student who finds little of interest in a subject should be encouraged to thumb through the textbook he is using to see if it may not contain some matters of interest to him. He should be encouraged to think through why he chose the subject or course, or why it is required; and of ways in which it might be of some help—e.g., history can give him a better perspective on today's headlines, can add interest to historical points visited here and abroad, or give fresh meaning to a hobby. For example, he may collect stamps, many of which commemorate historical events or persons, or he may be an amateur photographer with a vague but as yet unexplored interest in the nineteenth-century daguerreotype. As his knowledge of the subject grows, usually so will his interest. If he comes to realize that others are interested in the subject—even if it is only the author of his textbook or his instructor—he may begin to speculate on *why* the subject fascinates someone else. Such speculation has been the means of awakening an interest in a number of previously indifferent students. It may be noted in passing that the teacher who succeeds in inducing interest in one of these ways is not employing an artificial device, such as those mentioned on page 3, which could promise only short-lived success. The approaches recommended in this paragraph involve bringing about a union between the subject and the student's personal self and its needs. This is, of course, not the same thing as the proverbial dangling of an irrelevant carrot before the nose of the student in the fond hope of spurring him forward another labored step.

Individualize some assignments

There are other ways in which the instructor can help the student to have a better reason for studying than simply to pass the course, and to discover in his study a satisfying private experience that he will seek to continue long after the course is over. Some reading assignments can be diversified, and some personal preferences of students in the selection of readings can be permitted—they need not be confined to fixed, circumscribed books. William Dean Howells wrote: "The book which you read from a sense of duty, or for any reason you must, does not commonly make friends with you. It may happen that it will yield you an unexpected delight, but this will be in its own unentreated way and in spite of your good intentions."[8] This truism does not imply that works which are landmarks in our culture should be neglected, nor does it deny that students' obedience to duty is an essential ingredient in character. It does argue, however, against undue arbitrariness on the part of teachers that makes insufficient provisions for individuality of taste. Outward conformity on the part of a student is not necessarily a mark of inward growth or interest.

---

[8] William Dean Howells, *My Literary Passions* (Harper and Brothers, 1895).

SAMPLE QUESTIONS	*Yes*	*No*
1. Are you usually prepared for class?		
2. Are you usually prepared for examinations?		
3. Do you have a special room in which you usually study?		
4. Do you have a regular time during which you usually study?		
5. Do you usually give careful and systematic attention to all the subjects or courses you take, regardless of your interest in them?		
6. Do you usually find it easy to concentrate while studying?		
7. Do you usually preview a chapter before reading it?		
8. Do you frequently pause in your reading to summarize the content to yourself?		
9. Do you usually succeed in spotting the main ideas in paragraphs?		
10. Do you usually make notes on your reading?		
11. Do you usually make notes during class?		
12. Do you frequently discuss your studies with other students outside of school hours?		

Have the student make an inventory of his study skills

One way to motivate study is to have the student make a self-appraisal of his own study practices. Published inventories of study skills are available which are systematically developed, standardized, and accompanied by directions for administering, scoring, and interpreting them.[9]

[9] Among these are Ralph C. Preston and Morton Botel, *Study Habits Checklist* (Chicago: Science Research Associates, 1957); and William F. Brown and Wayne H. Holtzman, *Survey of Study Habits and Attitudes* (New York: Psychological Corporation, 1953, 1956).

If the instructor is satisfied with having the members of his class make a quick and informal appraisal of their study skills, he could copy the inventory on page 13 on the chalkboard, directing them to place a mark in the column which best answers each question. An answer of "yes" in each instance means that the practice is in accord with practices recommended by superior students.

An inventory can help a student to identify his deficiencies and inconsistencies in study. Having a clearer understanding of his study behavior is often the first step toward his improving it and toward his developing greater interest in the study process.

2

Developing Self-Discipline in Study

Interest in learning is a prerequisite to true scholarship, but there are always certain study tasks which are onerous to the learner and yet must be completed, even though they don't appeal to him, and despite competition of distracting and more alluring activities. Only a stern self-discipline can be counted upon to keep the learner grinding away at the routine study task.

What is the source of self-discipline? The child at birth has none. His behavior is wholly spontaneous and instinctive. Gradually he learns, through the attitudes and actions of his parents, to conform to certain rules. If his parents have some knowledge of the theory of child development, and are stable and responsible people, he learns that meals are served at set times and that he cannot satisfy his appetite at whim or will; he learns that he must treat books with respect and not write in them or cut their pages; he learns to undress before going to bed. Probably through a mixture of love and fear of his parents he adapts to such externally imposed regulations. This adaptation establishes for him the model and the practice of discipline from which he builds his own self-discipline.

Later, if he is granted a proper amount of freedom for experimentation, he will eventually impose his own restraints over his behavior. For example, he may decide on his own to save his allowance until Saturday, when he and his pals plan to attend a movie matinee, rather than spend it all on candy the day he receives it. Through trial and error in spending his allowance, planning his chores, choosing his clothes for the next day, and other decision-making activities (in which he should be given increasing responsibility as he matures), he learns to forgo indulgences of the moment in favor of greater satisfaction over the long term.

Parents may often have good reason to make such decisions for their child and to require that he carry them out. Although this is necessary at times, parents should avoid making a habit of running their children's lives. Adults can often trace their own choice of magazines, manner of washing dishes, and other fixed behavior patterns to their having had such early choices and decisions made for them. In extreme cases such adults are not people in their own right, but live in unconscious, immature dependency upon those who exerted authority over them as children. This is not self-discipline. Too much of it makes it increasingly hard for the child to shoulder responsibility independently at a later period.

In summary, a child builds the power of self-discipline through two steps: first, in a disciplined home atmosphere, he unconsciously comes to accept discipline as part of life; second, by gradually being granted *appropriate* freedom, he learns the techniques and advantages of self-discipline through having to test and sharpen it in his day-to-day experiences.

SELF-DISCIPLINE IN THE PRESCHOOL AND KINDERGARTEN PERIOD

Provide freedom

It is not easy for teachers of young children to enforce rules without resorting to harsh disciplinary practices; nor, conversely, to encourage freedom in some areas without committing the evils of overindulgence. Pupils of too-strict teachers (just as do children of too-strict parents) lack the chance to develop their own rules, to experiment with making decisions, and to exercise self-denial in the present for the sake of more fulfilling gratification later on. They get so accustomed to being told what to do that they do not learn how to think for themselves, to plan for themselves, or to establish their own momentum. They apply themselves only when required to do so. Research has shown an excessively large proportion of such children of harsh parents to be either anxious, defiant, or painfully shy. Such rigid personalities do not provide the fertile soil required for the growth of self-discipline. The teacher can help such children by providing a more wholesome atmosphere, but their conditioning at home places severe restrictions on what the teacher can do for them at school.

Provide rules

Children of indulgent parents and teachers fare no better. They sense a softness which is really the adults' uncertainty of their own authority. The adults, for their part, are probably wishing to avoid the tyrannical pattern imposed upon them by adults in childhood. Children who grow up in laxity find it difficult to distinguish democratic living from anarchy. They do not find in their teachers or parents what every child is entitled to —the help, support, and security which rules supply when we must face up to reality and accept those necessary restrictions which society imposes. They tend, in the absence of a better model, to adopt the same permissive attitudes toward themselves which their elders do. They often become "wild," insecure, and cynical.

Teachers of young children should make it clear through both precept and training that there is a right way of doing things. Coats are hung up, not strewn about; play equipment is not left out in the rain; hands are washed before lunch; and the like.

Provide responsibility

Teachers should also give their children appropriate responsibilities in the classroom. Nursery school and kindergarten programs can make a strong contribution to the development of children's responsibility through a rotation of individual and group work, such as taking care of mid-morning juice and taking out and putting away blocks and art materials. Teachers should make it a point to maintain frequent contact with the parents of their pupils, helping them where necessary to see ways in which the sharing of work can become a part of their households; how every mother may plan her housekeeping to make use of her youngsters' capacity for work—such as dusting, putting away washed dishes, shining the silverware, feeding the cat, bringing in the newspaper, and setting the table. These illustrations may seem slight to those who were brought up on farms where children were allotted more robust chores, but the smaller tasks, even in a small apartment, are psychological equivalents of chopping wood and gathering eggs. In talking with parents, teachers should stress that the work be really useful and worthy the respect of adults and be performed freely, without thought of compensation.

In meeting standards of excellence in the performance of even these homely tasks, the child can have his first experience in sticking to a job and tasting the satisfaction that only work well done can bring. When the child develops the feeling that he, like his elders, can do honest-to-goodness work, the ground has been laid for later self-discipline applied to study.

SELF-DISCIPLINE IN THE ELEMENTARY SCHOOL PERIOD

If, before entering school, the child has learned the rudiments of self-discipline through participation in family work, and if this learning has been strengthened during the nursery school and kindergarten years, he will find it comparatively easy to buckle down to the requirements of formal schoolwork. If he has not learned these rudiments before entering elementary school, then his elementary school teachers are obviously going to be limited in what they can do for the child. In any case, the best approach for them is to strike a balance between the extremes of rigid control and permissiveness. This seems to be the most reliable recipe for molding a child who will restrain his spontaneous impulses to chat, dawdle, and "roughhouse," for the sake of order, for building his self-discipline, and for the sake of getting his schoolwork done.

Every experienced teacher knows that children enjoy work—even hard, tedious work. It need not be sugar-coated, which would be deceptive anyhow. Youngsters find satisfaction in tasks which they can understand. If their teachers provide an example of dedication to what must be done, children will manifest a sense of duty, if at first only sporadically. Teachers do not always realize that during this period of preadolescence it is normal for the child to regress in the consistency of his performance. They frequently complain that children in these years start a job or a hobby and fail to stick to it. Constructive traits which were thought to be firmly established by age six seem to have altered for the worse by age nine. The child's standards of work, dress, speech, and the like seem to be slipping. He becomes sloppy and careless. He may take up an assignment in school, only to drop it or finish it hurriedly and unsatisfactorily.

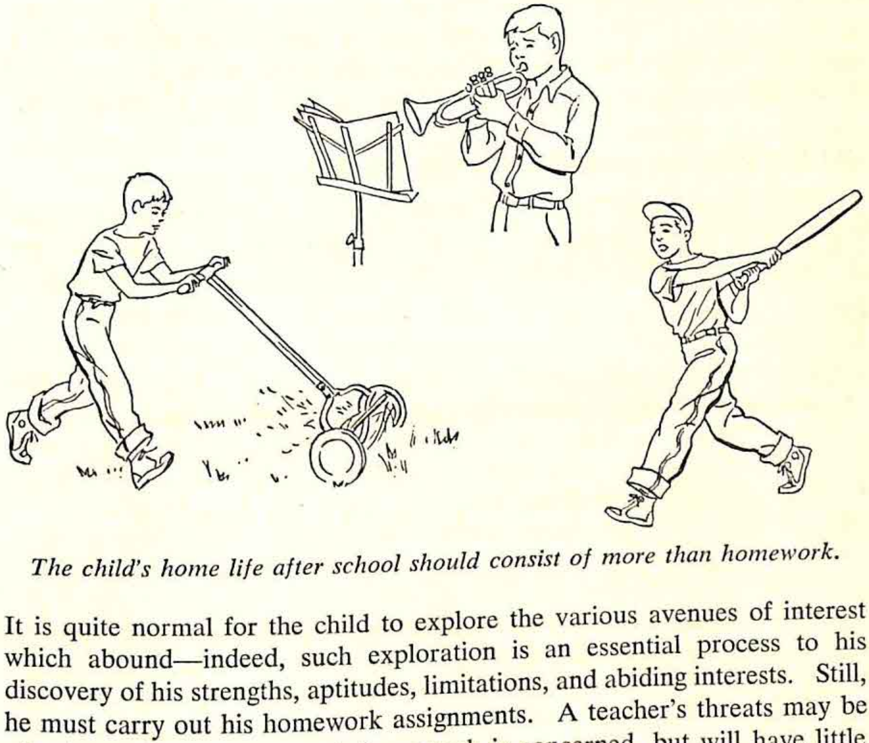
Ideas for dealing with these regressive tendencies are likely to emerge from an understanding of them. Two factors calling for understanding are the preadolescent's growing independence and the sudden expansion of his interests.

Recognize children's accelerated growth toward independence

In growing up and seeking greater independence, children wander from their earlier identification with adults. The standards of grownups, which a short period before they strove to imitate, become for the time being overshadowed. Children now pay closer heed to the standards of their pals. One of the outcomes is a seeming disregard of standards of work which results in conflict between child and adult. This conflict can be minimized if teachers recognize the preadolescent's desire and need for greater independence and give this drive opportunity for expression in areas where it will be beneficial. Teachers will once more find it beneficial to work closely with the home. Parents can be encouraged to arrange hikes, camping trips, and visits to relatives whereby their children can "prove" they are no longer tied to mother's apron strings. In the classroom, teachers can put children on their own through assigning to individuals and to groups such tasks as the preparation of a special science report, membership on a pupil committee to supervise an arithmetic bulletin board, the responsibility of making an announcement during assembly, the care of a classroom pet over a week end, the construction of a poster for Book Week, the composition of a letter of inquiry to a map publisher, and the like. Having such experiences will make it seem less important for them to exhibit their independence in taking short cuts in schoolwork.

Help children plan their time

The second factor which needs understanding—the sudden expansion of their interests—results from their rapid initiation into, and their increased ability to comprehend, a "world . . . so full of a number of things." Adults with good memories can recall how distracting the world outside home and school was for them during this period of their own growth.



The child's home life after school should consist of more than homework.

It is quite normal for the child to explore the various avenues of interest which abound—indeed, such exploration is an essential process to his discovery of his strengths, aptitudes, limitations, and abiding interests. Still, he must carry out his homework assignments. A teacher's threats may be effective so far as tomorrow's homework is concerned, but will have little or no influence on the long-term development of self-discipline. For this, example of the teacher's attitudes toward his own duties will be persuasive, as will his assistance in helping the child plan how he will spend his time after school. The teacher can have the child list things he wishes and needs to accomplish before bedtime. The teacher should recognize that home life after school should consist of much more than homework and make assignments which are quantitatively reasonable as well as qualitatively challenging.

Explain details of assignments

Teachers can also help by making assignments precise and realizable. If a child is to do some reading in a reference book and report orally on it, the teacher should prepare the child with pointers on how to take notes from a reference book, how to organize them, and how to plan and practice delivering the report so that it will be lucid and interesting. Teachers are sometimes deceived by the apparent maturity which some children display at this period, and give assignments which the child lacks the background and skill to perform. Under such circumstances, because of his feeling of inadequacy, the child puts off the job or does it sloppily—easy to do in a world so new to him and so full of exciting possibilities. It is up to the teacher to know his pupils, give assignments in keeping with their individual abilities, and explain where necessary how to go about the work.

SELF-DISCIPLINE IN HIGH SCHOOL AND COLLEGE

Basic traits of character are likely to be fairly "set" by adolescence. However, teachers of this level need not abandon hope of instilling self-discipline in apparently shiftless students. In many cases, the shiftlessness may be a pose. There may be more iron under that debonair behavior than meets the eye. It has been the experience of reading clinics that many a high school and college student who has been given pointers by a clinic on self-discipline in his studies has returned to express his gratitude for the tips. The procedures for improving one's self-discipline may seem obvious to the instructor, but they are unknown to many students. There is much that the instructor can do to impart them to the student.

Emphasize the importance of setting

The instructor should explore with the student his need for improving his physical surroundings for study. He should be acquainted with the fact that poor physical surroundings are often a factor in poor concentration, which is one of the greatest hurdles for an inept student.

The instructor should point out that a room of one's own is, of course, the ideal, but that, if this is out of the question, he should seek a desk or a table he can call his own, to be reserved for study purposes only. Its surface should be ample for him to spread out several books and notebooks at a time. After each study session he should clear it so that he can use it for his next study session without having to push aside a clutter of books and papers.

The instructor should also explore with students their need for drawer space or a nearby shelf for study materials. Together they might list the materials which should be kept on hand—various kinds of paper (notebook, typewriting, graph), supplies (pencils, erasers, ink, paper clips), references (dictionary, atlas, mathematical tables).

The student should arrange essential equipment neatly and within his reach, and keep his desk free of extraneous materials.

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The problem of distractions can also be profitably pursued by instructor and students. The following two rules were the outcome of one such discussion:

1. A student should plan to shut himself off as well as he can from distracting sights and noises during periods of study. His desk should be kept clear of extraneous material (photographs, calendars, newspapers, clocks, and pop bottles). He should close his door to shut out conversations, television and radio programs, card games, and other noisemakers prevalent in the average home or dormitory. (However, since research indicates that background music does not necessarily cut down on reading or study efficiency, music is permissible for those who are not disturbed by it.)

2. Studying alone is better than studying with a fellow student or a friend. (Talking over one's work with another is at times stimulating and helpful, but mastery of material calls for independent work. The good student is usually a solitary worker.)

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If all this strikes some students as a bit austere, they will just have to grit their teeth and recognize that austerity is an essential in the successful study process!

Aid students in establishing time schedules

An important adjunct to a good physical setting is a time schedule for study. This helps to assure allotment of sufficient time for study and regularity in studying, and prevents students from falling behind in their studies. According to research, falling behind in assignments is one of the more serious student failings. The instructor should encourage students to set up a study schedule which allots specified periods of each day to study, class attendance, meals, and social and athletic events. It should be tried out for practicality and revised if necessary, and then adhered to throughout the school term. The instructor should also illustrate how, at the outset of each study period, the students should budget the time for the period so that he will accomplish each of the required tasks. For example, he might allot thirty minutes to his algebra problems, then allow himself a five-minute break, then allot forty minutes to his English composition.

Adopting some kind of physical regimen like the foregoing makes it easier for the average student to discipline himself to the rigors of study. He finds he can start studying as soon as he sits down at his desk. It becomes a habit. So does concentration. He turns out more work and takes greater pride in it. He even learns to enjoy it and to perform it with the same degree of adroitness that any skilled worker brings to his job—garage mechanic, watch repairman, or electrician.

To be sure, there are other vital factors involved in concentration and study success than having good physical arrangements which, however, are important, as we have seen. These other factors will be taken up in Chapters 3 and 4. But self-discipline has a poor chance of making its appearance unless the student makes sure he has physical conditions conducive to order, quiet, concentration, and regularity.

3

Developing Skill in Gathering Information

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The essence of learning a subject is the bringing together of the information and points of view which are important to the subject and making them a part of one's background. There are many sources to which a person can conceivably turn in his search for information: experience, experiment, tradition, scholarship, demagoguery, his own flashes of insight. Every teacher should assist the learner (a) to value and desire *authentic* information, (b) to know how to distinguish *authentic* sources from those which are *spurious,* and (c) to know how to extract information from the printed page accurately and efficiently. These attitudes and skills develop gradually. Their full attainment in college depends upon their careful cultivation during the earlier years of childhood.

FOUNDATIONS FOR GATHERING INFORMATION DURING THE PRESCHOOL AND KINDERGARTEN PERIOD

Help the child find answers through observation

Teachers provide important intellectual training when they convert children's questions into opportunities for showing them some of the ways to gather information. Many of their questions, of course, are more sensibly answered directly by adults, as was illustrated on page 7. However, some of them can be answered through observation of the activities of man or nature. When that is the case, the teacher can say, "Let's go see" and at a convenient time take the pupils to observe whatever will supply the answer—a spider spinning its web, a moving cloud, men pouring concrete, the block and tackle of a wrecking truck hoisting a car, muffins rising in the oven. Such beneficial opportunities abound.

Encourage the child to approach learning with humility

However they handle children's questions, teachers should approach them with integrity and humility and avoid giving the unwarranted impression that all knowledge is known or fixed. Children who habitually hear their questions answered in a tone of final authority are likely to get an untrustworthy sense of security and have difficulty later in coping adequately with data which are tentative, contradictory, or controversial. The child should be encouraged to keep his eyes ever open for evidence. The teacher should not be reluctant, when the correct answer is obscure, unknown, or not at his fingertips, to give an honest reply. He might answer, depending upon the question and his knowledge, in one of the following ways:

"Probably."
"Maybe."
"Let's see if we can find out."
"I don't know, but we can ask Mr. White, who fixes cars."
"We can watch next time we're there."
"Let's look it up in a book."
"No one knows why."
"This is all I can tell you about it . . . ."
"No one is sure, but . . . ."

The child will not always be comfortable with such answers, even when they are the only answers the teacher can honestly provide. The young child looks instinctively for the security of absolute certainty, as seen in the following conversation I had with my son when he was four years old. We were fishing in a rowboat on the St. Lawrence River.

"What makes the big waves, daddy?"

"That boat passing by."

The next day we were again on the river. A stiff wind was blowing, causing heavy waves to beat against our boat.

"I know what makes those waves, daddy. There's a boat going by."

"No," I answered. "See—there is no other boat on the river today. The *wind* is making the waves."

"But daddy, yesterday you told me waves were made by *boats*."

To the young child the world is chaotic and unpredictable. Every fact about it, every explanation, every interpretation that gives it greater order and harmony is seized upon. Exceptions and complexities are disturbing. We must help him gently to an understanding that, even where there are rules, laws, and principles, there are often exceptions and complexities. Even some college students have not fully grasped this, and their tendency to oversimplify becomes a significant obstacle to academic success. We want the child to find order without resting in the false belief that there are simple or fixed answers to complicated and imponderable questions.

Encourage elementary reference work

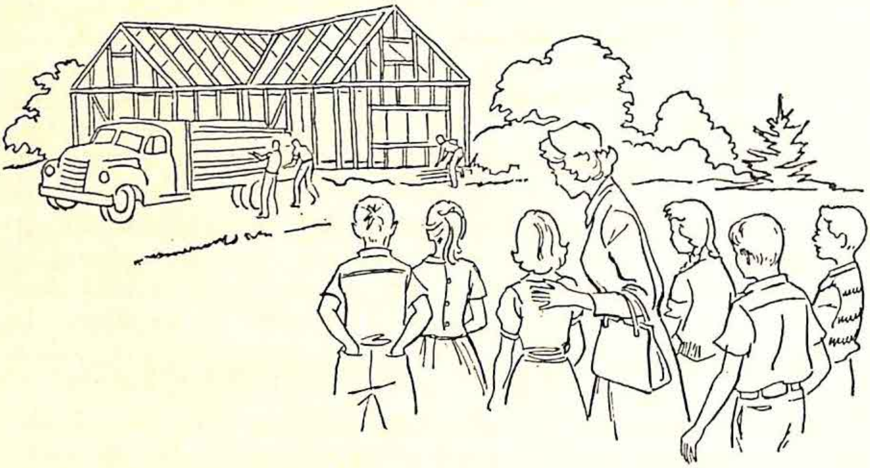
The role of books in gathering information is important even at this early age. "What bird is that?" and "How many kings are in the world?" are typical of questions which can be answered through books. The teacher, with child in tow, should locate a reference which will supply the answer, studying pertinent pictures with the child, and reading explanatory passages to him. The child gradually learns the usefulness of books and may acquire considerable independence in using them to track down information. One four-year-old received a trumpet for Christmas. He was confused when an older sister referred to it as a horn. He went to a book with pictures of musical instruments on his bookshelf, looked up the picture of the instrument most closely resembling his own, asked an adult to read the names, and found it was closer to a trumpet than to a horn. Thus he settled the question in his mind and demonstrated how books can be used for reference even by the very young.

AIDING THE ELEMENTARY SCHOOL CHILD IN GATHERING INFORMATION

Most children receive their first formal study assignments during their elementary school years and through these assignments engage in their first formal reference work. Let us see that they start off on the right foot! We must give painstaking attention to the development of such elemental skills as observation and reading.

Train pupils to observe accurately

Their first training should be in collecting data through observation. The class trip provides good practice. One third-grade teacher took her class to see a housing development under construction. The class and the teacher had agreed that they would look for specified details in connection with construction—procedures, materials, tools, and division of labor. When they got back to the classroom they found they did not all agree about what they had seen. The teacher explained the necessity for care in making observations and discussed some of the problems of gathering precise data at firsthand. She asked some of her pupils to recheck their first observations after school hours. They compared their amended findings with the more condensed, generalized treatment of building construction found in textbooks. They found that a good textbook account is a better aid than firsthand information to an understanding of how the parts of a process fit together, but that firsthand observation is better than textbooks for learning the details of a process.



Collecting data through observation is an important part of a child's training.

Prod pupils into becoming careful readers

"Prod" does not mean "nag"! It may be sufficient merely to question the pupils closely on their reading. Such questioning can assume a variety of forms. One successful procedure is to ask the members of the class one or more questions and then to have them read the textbook passage which will supply answers to the questions. With the questions in mind, they will tend to focus on the relevant details while reading. Suppose the pupils are to read the following textbook passage:

> For many years the American people did not think much about the need to save their forests. When Theodore Roosevelt became President he started a campaign to wake the people up. This was not easy. Many people thought they had a right to chop down as many trees as they chose without planting new ones. Today, however, the government and many private citizens are working hard to protect our forests.

Before the reading begins, the teacher might write on the chalkboard the single question:

> Why did President Theodore Roosevelt find it hard to save our forests?

Of course, many passages will be longer than this—sometimes several pages in length—and require more than one question.

When the pupils become practiced readers, they can be expected to formulate their own questions. They should be taught how to look quickly over the headings and pictures in a section of a book in order to get an idea of what the author covers in that section. After the pupils have a preliminary notion of what the section is about, the teacher has them formulate questions, then asks them to keep their questions in mind as they read. This technique will keep their minds active as they read.

Another variation is for the teacher to formulate questions, but to save them until after the class has read the assignment. Before the pupils begin reading, the teacher announces that he will have some questions for them when they finish the passage. Hence, they are encouraged to read with care.

Such exercises not only enable pupils to check their comprehension of the author's meaning but prevent their being satisfied with mere fuzzy impressions.

Encourage pupils to form accurate images of what they read

Teachers should try to eliminate the bad habit which some pupils acquire of not forming mental pictures of things, places, people, and situations which the author describes. Obviously, there can be no clear understanding, but there will be an abundance of misconceptions, if a pupil makes no effort to visualize or if he visualizes but has so little curiosity that he does not check the accuracy of his visualization. Imagine, in such cases, what little impact such sentences as the following would have if the italicized concepts are unknown to the reader:

Most of Greenland is covered by an *icecap.*
It took people a long time to travel from Philadelphia to Boston by stagecoach.
[*speed of stagecoaches; distance from Philadelphia to Boston*]
One type of machine is the *lever.*
The *breaking waves* dashed high.

From time to time, the teacher should help his pupils see the vivid realities that lie behind the words in books. He can do this through verbal description, accompanied by pictures, objects, and maps. He should also instill in them the desire to look for aids (e.g., books, pictures, television programs, films, and museums) which will form pictures of unfamiliar concepts when they are reading independently.

Teach elementary reference skills

It is not hard to teach children about the existence and purpose of the standard dictionaries, encyclopedias, almanacs, and atlases, and their location in the classroom or library. It is only a small step further to teach them how each reference book is organized. For example, in dictionaries and encyclopedias, entries are arranged alphabetically; in an almanac, entries are arranged topically throughout the text and alphabetically only in the index. A dictionary lists all the words in the language;

an encyclopedia discusses only selected subjects. Practice in looking up information on suitable subjects, such as *Australia* or *myths,* will teach the child something about what he can and cannot expect to find in a given reference book, and the approximate purpose and scope of each.

Work with reference books requires some knowledge of alphabetization, of course—and this means more than simply a knowledge of the sequence of letters in the alphabet. In the early grades the child can learn that he will find pictures of, say, ants, in the encyclopedia volume marked "A to CEL" on its cover. In the intermediate grades he can learn why *ant* occurs after *Andes* and before *anvil.* Finally, when still in the intermediate grades, the youngster, upon finding the entry, will need to be taught how to scan it for the pertinent information he has been assigned to locate. By way of example, if his assignment is to get data on man's earliest domestic animals, and he succeeds in finding an entry entitled "Primitive Man" in a children's encyclopedia, his next task is to look for headings within the article, such as "Taming Wild Animals," which will conceivably contain the necessary information. If he is not taught to do this, he may read laboriously through a lengthy article, word by word. Even gifted children sometimes acquire such inefficient study habits.

Stimulate pupils to check sources

Children have never before had so many books at their disposal as they do today. There are specialized juvenile books of varying quality and accuracy on a host of subjects, ranging from bird study to word study, from worship to warships, from etymology to entomology. Modern children read widely, in irresponsible and spoofing literature as well as in authoritative and literary works. Lacking a background for discrimination, they need to be cautioned against accepting a statement as true simply because it appears in print.

Naturally, good teachers try to guide children to good books. They also introduce children to diverse accounts of a subject, explaining that, in the search for a complete and true picture, a single source is often not sufficient: different observers do not always see the same things nor are they always equally open-minded. Furthermore, different writers of equal integrity and with the same facts may draw differing conclusions. An elementary geography implies that all Eskimos live in igloos; a newspaper account of an interview with an Eskimo woman, on the other hand, quotes her as saying that she had never seen an igloo and did not know anyone who had! One book reports that Mexicans are lazy and shiftless; another, that they are creative and productive. A pamphlet issued in the 1930's predicts that by 1970 our population will have reached a plateau; another pamphlet, published twenty years later, predicts our birth rate will continue high and will continue to exceed the death rate. Even in matters of measurement, such as the altitude of a mountain or the length of a river, atlases and other reference books will differ.

Children should be taught to evaluate a source by finding out what they can about the probable degree of objectivity of the author on the subject in question, the type of writing in which the statement occurs (e.g., fiction, humor, poetry, or factual report), the date of the information, and the degree of accessibility the author probably had to firsthand data. The better readers in the class should be given specific assignments in source books in order that they may discover the kind of material which constitutes the source of trustworthy knowledge and against which the validity of other accounts may be tested. To this end, teachers should search out and make available to their classes all manner of eyewitness reports—autobiographies, letters, photographs, newspaper reports, and sourcebooks like Commager and Nevins's *Heritage of America,* Stefansson's *Great Adventures and Explorations,* and Agar and Associates' *Geology from Original Sources.*[1]

Give the poorer readers practice in getting information

Most elementary classes contain some pupils who lag behind their classmates in reading ability by a year or more. In a fourth-grade class there are children who can read at only the second-grade level. They are able to recognize less than 80 per cent of the running words of the class's fourth-grade science book. Hence, they are saddled with a book they really cannot read. Sometimes a more suitable textbook covering parallel content can be found for these retarded readers, or they can be reassigned to a class in which their disability would be less of a handicap. Could either be done, it would be a blessing to these children and to their overburdened teachers. Unfortunately, these possibilities are not usually present.

However, the teacher need not despair. To begin with, the words in the table of contents can be taught to retarded readers as sight words. Able to read the table of contents, they can learn the organization of the subject, the relationships of major topics to each other and to the subtopics, and a number of words which will reappear in the text. Furthermore, when teaching sections of the book which are especially important, the teacher can divide the class into teams of two or three pupils each, as proposed by Chase.[2] According to this practical plan, the teacher provides each team with one good reader. Each pupil is given a teacher-prepared list of questions covering that day's lesson. The good reader of each team reads the assignment aloud to his teammates who follow along with their eyes on the corresponding passage in their own books. Then the good reader reads the first question aloud to his team. The pupils look for the answers in their textbooks and give them orally to their teammates. When in doubt, members of a team consult one another. Then they consult an answer sheet. The other questions are read and answered similarly. This is a highly satisfactory procedure on the basis of my own experience with it in demonstration teaching and of reports I have had from various teachers who have tried it. Every child gains security as he is put through the paces of a disciplined study procedure.

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[1] Henry Steele Commager and Allan Nevins, *Heritage of America* (rev. ed.; Boston: Little, Brown & Company, 1949); Vilhjalmur Stefansson, *Great Adventures and Explorations* (New York: Dial Press, Inc., 1947); and William Agar and Associates, *Geology from Original Sources* (New York: Henry Holt and Company, 1929).

Since these and most source books are written for the mature student, their use in the elementary school is restricted to passages which the teacher selects and then reads and interprets to the class, and to silent reading by gifted pupils in preparing written and oral reports. For a list of additional primary sources, see Ralph C. Preston, *Teaching Social Studies in the Elementary School* (rev. ed.; New York: Rinehart & Company, 1958), p. 234.

Teach good listening habits

Inattentive listening is a common human trait. Although listening ability is positively correlated with reading ability and intelligence, experiments have shown that improved listening can be effectively taught per se. This is a fortunate circumstance in view of the fact that so much of learning depends upon listening carefully to what the teacher and one's classmates are saying—the oral reading of the teacher and fellow pupils; the teacher's directions, explanations, and questions; the teacher's answers to pupils' questions; and the give-and-take during class recitations and discussions. Training may be given by providing regular and frequent practice in following oral directions (e.g., through computational problems in arithmetic given and carried out orally), and through regular and frequent reading of passages to the class during which the pupils attempt to identify the passage's main ideas and to distinguish them from subordinate ideas.

Teach pupils how to get the most from films and filmstrips

A special application of seeing and listening skills is the viewing of films and filmstrips. The better educational films are unrivaled media for presenting certain kinds of unfamiliar content in a detailed, lifelike, dramatic, realistic way. Filmstrips, unlike films, can be paced to the needs of the class, and the teacher serves as commentator. In our present age of mass communication, particularly with the growing influence of television over our tastes, standards, attitudes, and information, it is important that children receive training in viewing such material critically and in retaining whatever is worth retaining. Such training can be provided through films and filmstrips.

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[2] W. Linwood Chase, "Individual Differences in Classroom Learning" in *Social Studies in the Elementary School,* Fifty-sixth Yearbook of the National Society for the Study of Education (Chicago: The University of Chicago Press, 1957), Pt. II, ch. 7.

Research findings concerning the use of audiovisual aids point to certain desirable practices. First, pupils should learn that getting the most from these aids requires an active frame of mind—in other words, they cannot sit back listlessly and hope to absorb the important ideas through their pores. The teacher can prepare for each viewing by having the pupils formulate questions which the aid may be expected to answer. An active frame of mind may be encouraged throughout the viewing by providing for pupil participation—having pupils look for answers to their questions and, in the case of filmstrips, having them read the textual portions aloud. Second, the content should be analyzed and summarized by the class directly following the viewing. Third, provision should be made for viewing the film or filmstrip again the next day, with the sound track turned off this time, in the case of a sound film, and with a pupil serving as commentator. Successful conditioning of pupils to this kind of critical, careful study of educational films and filmstrips not only will improve their skill in dealing with such educational media in their subsequent schooling, but should make them more intelligent viewers of radio, television, and motion pictures in general.

MAKING EFFICIENT DATA COLLECTORS OF HIGH SCHOOL AND COLLEGE STUDENTS

High school teachers and college instructors "load on" the work. The bulk of their assignments is aimed at extending the student's knowledge through the textbook and other reading sources. The student who hopes to maintain a creditable academic record has no choice: he must become a highly efficient and exacting extractor of information. His mentors, regardless of their specializations, bear a responsibility to help him acquire the requisite skills.

Explain how to preview a reading assignment

One of the average student's greatest difficulties in studying is learning how to concentrate, i.e., learning to control his wandering mind. One method is for him to take the time and trouble, before beginning systematic study, to preview each assignment. Previewing consists of survey-ing in its totality that portion of the textbook or other book on which the assignment is based, before attacking its subdivisions.

The student begins by reading over the table of contents of the assigned book. In this way he sees the organization of the assigned chapter and its relation to the rest of the book. The first and last paragraphs of the assigned chapter are then read, followed by study of whatever pictures, tables, graphs, maps, and diagrams appear. We can assume that the author included these features—headings, first and last paragraphs, and graphic material—in order to bring out phases of the subject which he thinks important. By looking them over, the student can quickly get clues to the nature of the content and the topics and problems discussed.

When he has previewed the chapter, the student puts the book aside and recites to himself what he learned about the chapter—its organization, general content, and purpose. This should put him in an anticipatory frame of mind so that he can read the assignment with greater purpose. Having seen the forest, he is now ready to examine the individual trees.

Have the student raise questions as he reads

In order to keep alive the attitude of anticipation created by the preview, the student should convert each section heading into one or more questions as he reads. Suppose that he has been assigned a chapter in his physiology book. The chapter title is "Resistance and Immunity." The heading of one section reads: "Immunity following infection." He derives from the heading a question, such as, "In what diseases does immunity follow infection?" (When he becomes practiced, he will be able to convert a heading into several questions, holding them simultaneously in his mind, almost unconsciously; then, as he reads, he looks for answers to his questions.)

Our student now reads the section. Then he pauses and reviews it. Did he find the answer to his question? He did. For example, he recalls reading that during illnesses of diphtheria, infantile paralysis, and specified other diseases, enough antibodies are formed to cure the illness and to protect the tissues against the same infection for an indefinite time thereafter—sometimes permanently. Not only did he find the answer to this question, but he also learned that in the case of certain other diseases, including pneumonia and influenza, the body may become even more vulnerable to the disease as a result of one attack of it. If he is unsure about a point, he rereads the section to clinch it. This kind of rereading, unlike the random, hit-or-miss kind of rereading he may have done formerly, has both purpose and point.

Good readers look for answers to questions automatically and unconsciously. They bring to their reading their interests and curiosity; as they read they recall what they already know about the subject, and look for information concerning matters about which they are ignorant.

This means that reading to learn is an active occupation—not a passive one. Raising questions is simply a way of keeping poised for active thinking. The questions do not prevent the student from extracting other material than the answers to them. They do, however, keep him from becoming lost in detail and they keep his mind from wandering. The more questions he asks himself, the more he will learn.

Encourage independent browsing and study in the library

A spirited instructor can do a lot toward getting students to browse in the library for information or to broaden their backgrounds. He should encourage them to use 3-by-5-inch index cards to jot down book data—call number, author, title, date, and perhaps a few comments or quotations—to facilitate future reference. Even college students are often surprisingly ignorant concerning the arrangement of books in the stacks, the use of a card catalogue, and call numbers as guides to subjects. Students should learn how to use the *Readers' Guide to Periodical Literature* in tracking bibliographic information.

Many schools and colleges could make greater use of library assignments which require that the student explore a wide range of library materials. Such assignments are eye-opening experiences to most students, leading them to discover for the first time the excitement of running down information and piecing together scattered bits of it. The high school teacher or college instructor should not hesitate to share his own scholarly work with his students, helping them to sense the suspense and surprises attending this work.

Propose ways of solving problems in mathematics and science

The instructor should encourage students to *read* their mathematics and science textbooks before they attack assigned problems, rather than wait until they are stumped by a problem. Through illustration, he can demonstrate how the textbook, in introducing and explaining processes, offers a framework for understanding the problems.

Students should be cautioned about the crucial importance of *precise* reading of problems in mathematics and science. These subjects require a closer attention to detail than is usually required in other subjects. For example, in reading history or other narrative writing a student can look at the word "unfavorable" and perceive it as "unforgivable." The context will eventually serve to correct his erroneous reading. In seeking to solve a chemistry problem, however, the student who reads "gram" while thinking "ounce" cannot hope to solve the problem correctly!

Some instructors write problem-solving steps on the board in order to present a system of working on problems. The steps might approximate the following:

1. State in your own words precisely what is asked.
2. Select the method which will solve the problem.
3. List the essential facts and figures.
4. Make an estimate of the answer.
5. Solve the problem and compare your answer with your estimate.

Individual students may be called upon frequently to solve a problem at the board, explaining their work orally to the class and identifying each step as they come to it.

The Waterloo of many students who have considerable trouble with mathematics and science is the selection of a method—step 2 above. In the majority of such cases, the students do not need help with their study procedures as much as with acquiring the mathematical or scientific concepts upon which the solution to the problem is based. The understanding of advanced mathematics or science requires an understanding of each of the sequential concepts underlying the assigned problem. Because of below-average mental development, inferior prior instruction, or other factors, these students may have failed to build an orderly, integrated mathematical or scientific schema. Only through intensive tutoring in the fundamentals, often over a long period of time, can this deficiency be overcome.

Give the student tips on how to get the most from foreign language books

A student who studies a foreign language or who must read extensively in foreign language references in connection with his courses often spends unduly large amounts of time in extracting the meaning from a comparatively short passage. Most of his woes in this task can be overcome through (1) building a more substantial vocabulary in the language, (2) mastering the grammar, and (3) acquiring the ability to think in the language. Correct study procedures in learning a foreign language are of especial importance.

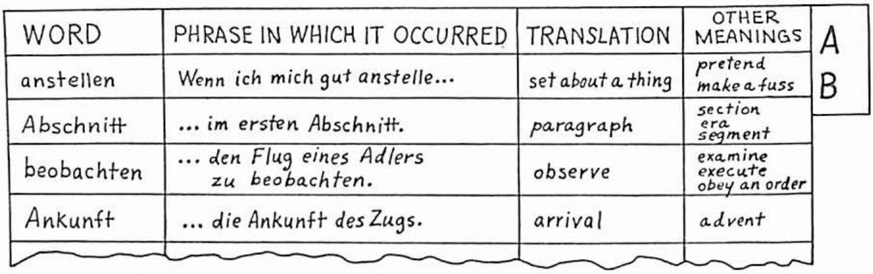
1. BUILDING A MORE SUBSTANTIAL VOCABULARY. The student should be persuaded to test his basic sight vocabulary by examining the vocabulary list in the back of a first-year foreign language textbook to see if he can instantaneously and accurately identify the meaning of at least a hundred of the words. If he cannot do this, he may assume that his stock

of sight words is deficient. Using the same book, he may read aloud its simple sentences and stories—repeatedly if necessary—until he knows them well. This method is more effective than trying to memorize word lists.

However, this is a mere beginning. It is doubtful if he will be able to read the language with fluency and adequate understanding unless he knows over 95 per cent of the running words at sight. This means he must set about to expand his vocabulary vastly. Systematic reading of interesting material—stories, newspapers, and the like—should be carried on apart from regular class assignments. In fact, language teachers often make such reading a part of the regular assignment to ensure its being done. In this recreational reading, it is not essential that all unknown words be looked up in a dictionary. The student should be encouraged to utilize as fully as possible the clues offered by the context. New words supplied by the clues will be gradually added to the student's vocabulary. Where context is insufficient, examination of the unfamiliar word may help through recognition of cognates (e.g., Spanish "concerto," French "concert," and German "Konzert") or through structural analysis (e.g., in German, "Strassenbahnhaltestelle" = Strasse (street) + Bahn (railway) + Halt (stop) + Stelle (place) = "streetcar stop.") There are always those words, of course, which have to be looked up.

Important words, or words that the student finds he is looking up more than once, he should be advised to keep in his own notebook-dictionary for recording words and idioms, and perhaps he should also make flash cards, as suggested on page 50. To clinch the difficult words and idioms, the student should be instructed how to recite them to himself through using them orally and in writing sentences, through repeating them from memory, and through reading them aloud.

2. MASTERING THE GRAMMAR OF THE LANGUAGE. Although much grammar is learned through a program emphasizing wide reading and vocabulary building, many constructions in a student's reading continue to have a fuzzy meaning for him if he has no firm understanding of the language's structure. Each language has its peculiar syntax, which is described in beginning textbooks and in grammars. They are sufficiently different from English to cause trouble in reading comprehension until they are thoroughly grasped. The rules of sentence structure are not numerous and can be briefly summarized. The best test of having mastered them is the student's ability to give his own examples of sentences representing each type of sentence order. Aside from syntax, each language has its peculiar conjugations. Each student seems to have his own particular difficulties with grammar. He can be helped to identify them and to focus his study upon them.



WORD	PHRASE IN WHICH IT OCCURRED	TRANSLATION	OTHER MEANINGS
anstellen	Wenn ich mich gut anstelle...	set about a thing	pretend make a fuss
Abschnitt	... im ersten Abschnitt.	paragraph	section era segment
beobachten	... den Flug eines Adlers zu beobachten.	observe	examine execute obey an order
Ankunft	... die Ankunft des Zugs.	arrival	advent

From a student's foreign language notebook-dictionary.

The nomenclature of foreign grammars often constitutes a hurdle for the student. He should be provided with a book of English grammar and helped to see parallels between English forms and those of the language he is learning. Through making such comparisons he will inevitably identify many distinctive and important features of the foreign language. For example, he will discover the French use of the comparative form of adjectives in connection with superlative expressions as in *mon meilleur ami* (my dearest friend); and the German use of adjectives as adverbs as in *sie singt schön* (she sings beautifully). Incidentally, it is advisable that the student be told that translating English sentences into the new language in connection with each grammatical concept will be more helpful than the learning of rules and conjugations, although that has its value, too.

3. ACQUIRING THE ABILITY TO THINK IN THE LANGUAGE. As long as the student's reading comprehension depends upon literal translations from the foreign word to the English word before forming the image for which the word stands, reading in the foreign language will be a tedious experience for him. Furthermore, such a word-by-word approach, whether in his native tongue or in the foreign language he is learning, interferes with fluent, accurate comprehension. The teacher can assist him in drawing parallels between his successful reading in English and his lumbering reading of the foreign language in order that he may pattern the latter after the former, orienting himself to the author and trying to anticipate the author's plan and thoughts. When the student succeeds in doing this, he will find himself reading in terms of phrases and ideas as he reads, and thinking ahead. It will take abundant practice before such reading becomes habitual. Unfortunately, instructors who emphasize literal translation in class inhibit this growth toward truly participating and thinking in a foreign language. Students should never be permitted to be satisfied with literal translations in their reading, but should be urged to get an image directly

from the foreign words and phrases without the intermediary of the corresponding English words and phrases.

Offer guide lines for the reading of books which are to be reported upon

Every reading clinician is familiar with the frustrated student who must write a book report yet does not know how to go about it. At times part of the fault seems to lie with instructors who are vague in stating the purpose of such assignments and who do not explain the standards by which they judge book reports. In such instances, the puzzled student wonders whether he should write a résumé, an interpretation, an evaluation, or some combination of these. However, whether a student does or does not know what the instructor desires, there are some tested procedures which he could follow with profit.

The first of these should be to ascertain what the author is trying to say, trying to promote, or trying to prove. The student may need to be told that a book report, no matter how charmingly or persuasively written, is not a very useful one if it fails to make a lucid presentation of the author's intention, the author's orientation to the subject, and the author's organization of his material. Special emphasis should be placed on the need to grasp the book's organization. The disorganized writer is disorganized partly because he is probably a disorganized reader.

Second, as he reads the book the student should keep notes of his own observations and reactions. He may need to be reminded that individuals differ widely in their responses to a book. If this is not self-evident to him, he should read and discuss with his teacher a variety of reviews of some recently published book, consulting the *Saturday Review,* the Sunday *New York Times Book Review,* and other sources. He will thus discover that reviews are the product of the individual critic's values and standards. Some dwell upon the quality of the prose, others on the accuracy of its factual content, others on its political overtones, and so forth. In short, the student's personal response is important.

Third, the student should avoid the opposed dangers of being too fond and uncritical of his own reactions, and of being afraid of his own reactions. He should evaluate his ideas rigorously, selecting those for the report which, upon reflection, are fair, valid, and appropriate—a difficult task for the egocentric student from a home or school which led him to believe that all his ideas are interesting or important or both! But the student who lacks self-assurance and who discounts the value of his own ideas is the one more usually found in this group. He needs all the encouragement and opportunity for release which his teachers can supply.

If the student is unable to apply these procedures independently, he should read a book and write a report in a tutorial or clinical situation in which his teacher can sit down with him and dissect his approach both to reading and to writing, diagnose his difficulty, and give him further practice in reading books and reporting on them.

Assist the slow reader to increase his reading rate

Probably every teacher is familiar with the laboriously slow reader and has noted how his slowness handicaps his academic achievement. He has the tendency to articulate each word either with his lips or inwardly, thus reading silently at about the same snail's pace which he employs when reading aloud. He cannot keep abreast of his reading assignments without sacrificing reasonable standards of thoroughness. He frequently studies into the early morning hours, neglecting the body's requirements for relaxation, recreation, and sleep.

A diagnosis of the disability of such students should be undertaken by a reading specialist to determine whether the slow reading is an isolated feature (thereby lending itself to direct instruction), or whether it is a symptom of more basic disabilities. These might be poor vision, deficient intelligence, a personality anomaly, poor visual discrimination, inefficient methods of word perception, an impoverished reading vocabulary, or crude procedures in extracting meaning from the printed page. If such factors can be ruled out, then immediate systematic training for increasing his reading rate will be in order.

The program may begin with requiring the student to read several pages, preferably from a book which he has looked forward to reading with pleasure and which is comparatively free of unfamiliar words and concepts. The instructor should time his reading and compute the number of running words per minute. (A rate below 250 words per minute on easy material is subnormal for a high school or college student.) The student should then practice upon the same material in paced reading—that is, reading at a rate which keeps him "on his toes"—a rate somewhat in advance of that which he has demonstrated he can achieve. Paced reading can be carried out in any of various ways. A highly motivated student can pace his own reading simply through conscious effort. As an aid, he may place alongside his book a watch containing a second hand. Suppose the book averages 300 words per page and the student's established rate of reading is 240 words per minute. He then should read in an effort to complete each page by the time the second hand makes a complete circuit. Or his instructor or another student can sit beside him and move a card down the printed page, successively covering the lines of print, thus forcing the reader to reach the end of the page in one minute. Pacing machines (for example, the *Reading Rate Controller* and the *Reading Accelerator*) and films (for example, the *Harvard Reading Films*) are also available which can be set so that the printed material will be exposed at an appropriate rate. Regardless of what pacing device is used, the student should practice daily for a period of a month or more, over which period the speed of exposure is gradually increased.

Following each practice period the instructor should check carefully the student's comprehension of what he has read. The student should be able to summarize the content and answer questions concerning its details. The need for such comprehension checks cannot be overemphasized. The objective of the training, obviously, is to increase the rate of comprehension —not simply the speed of visual mechanics.

Practice in phrase perception may accompany the pacing exercises. Phrases are printed on cards, which the instructor exposes one at a time for a fraction of a second each. Instruments known as tachistoscopes (for example, the *Flashmeter*) are available for mechanical timing of flashed phrases.

The above exercises are of little or no value unless the student attempts to apply the new patterns of reading he is acquiring to his day-by-day assignments. Once he acquires confidence in his ability to read recreational material at an increased rate, he should attempt to apply his newly acquired skill to study-type material. Here he should not expect to achieve the same rate of reading he has acquired upon his entertaining book. He will require more time when reading a page of his history textbook, for example, than a light novel; he will require time for anticipating the content of a section, for raising questions to himself, for reflection, and for intermittent self-recitation. In other words, he must learn to shift gears when he turns from a novel to a history book. More gear shifting will be required when he tries out his new pattern of reading upon his textbooks in economics, algebra, and chemistry, which demand much re-reading and analysis of unfamiliar intricate concepts and procedures. Our student will gradually discover that a good reader has not one reading rate but a variety of reading rates, each serving a different reading situation.

I shall close this discussion of the slow reader with two notes of caution. (1) Some students who need help with speeding up their reading are in need of a corrective program under the guidance of a reading clinician. When such expert help seems indicated, the high school teacher or college instructor is well advised not to attempt the instruction himself. (2) Although students tend to think that they should read faster than they do, wholesale attempts to increase the tempo of reading are of dubious value. A number of years ago I studied the reading skills of a group of students at the University of Pennsylvania who were eligible for election to Phi Beta Kappa—in other words, students with excellent scholastic records. To my surprise, their reading abilities varied considerably. One of the more marked variations occurred with respect to reading rate. Some read exceptionally rapidly, a few very slowly. Those who read slowly tended, in subsequent interviews, to attribute part of their success as students to their leisurely reading habits! I cite this experience to underscore an important fact: Success in school and college is not necessarily dependent upon rapid reading, and some good students have deliberately chosen to read slowly. As important as rapid reading is for particular students, wholesale, indiscriminate efforts to increase reading speed are likely to be misdirected and wasteful.

4

Developing Mastery of Content

Mastery of content means making facts, principles, and theories not only well understood but *so well fixed in mind* that they can be recalled later without recourse to books, notes, or other external reminders.

The permanence of learning in school involves many factors, including the learner's native intelligence, the skill of his teachers, and his familiarity with the concepts involved. By employing the techniques described in this section for "fixing" learning, the student will make the most of these factors according to the degree in which they are present.

MASTERY AT THE PRESCHOOL AND KINDERGARTEN LEVEL

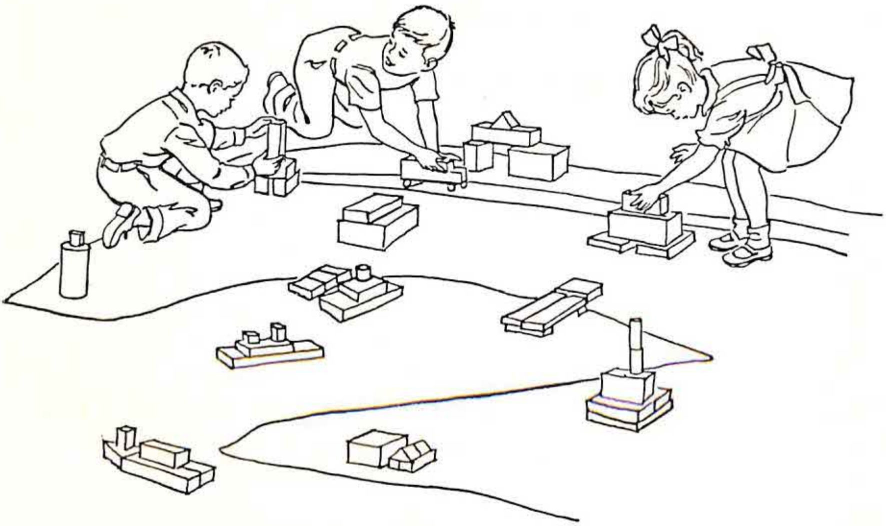
Mastery of content begins early for most children. They reproduce songs and poems by rote, even when not drilled into doing so and even when the material lacks meaning for them. Furthermore, they take genuine pleasure in the process, responding wholeheartedly to the rhythm, intonation, alliteration, rhyme, and the like, present in the material. They give proof of the fact that mastery in the form of verbatim reproduction is not only possible but pleasurable.

Capitalize children's love of rote learning

Nursery school and kindergarten teachers can direct children's love of rote learning by exposing them to the very best in song and verse and by encouraging them in their voluntary efforts to memorize it. Thus, at an early stage, children can acquire confidence in their ability to memorize and can achieve satisfying associations with the memorization process.

Make available to children materials for re-creating observed activities and impressions

Children should also be encouraged from an early age to make concrete representations of ideas and facts. This is not hard, for children quite spontaneously dramatize what they see about them—the work of mother, teacher, truck driver, zoo keeper, a prank in a television skit, or any activity that catches their fancy. They may also relive some of their experiences and impressions by drawing pictures about them. With blocks, boxes, or other construction-play materials they often build replicas of their neighborhood, a shopping center, roads connecting home and airport, or other familiar, man-made arrangement. The crudity of these portrayals should not blind us to their significance. They are experiments to reproduce by means of symbols whatever the class has recently observed or experienced. These portrayals lay the pattern for the child's later effort to master academic material by symbolically re-creating and summarizing it.



Children's mastery of their environment is aided by their reconstruction of some of its features and activities.

TEACHING THE ELEMENTARY SCHOOL CHILD HOW TO MASTER HIS STUDIES

When we say that a child has mastered a subject we usually mean that he is able to tell about it from memory. However, memorization is only the *final* step in learning; it seldom makes a good beginning. In most cases, mastery begins with seeing the subject's organization; it is further developed by self-recitation upon the subject; and it is clinched through committing selected and significant portions to memory. The following discussion of how the elementary school child can be taught this process of mastery is based on these steps.

Help the pupil to understand how the material is organized

The discovery by the pupil of how a subject is organized is the first big step to his understanding it. From the first year of school, teachers should disclose the order which lies beneath the confusion which, to the child, covers most of the things he sees and hears about. He can be helped to distinguish and sort out the myriad details of his culture—in the number system; in all manner of things, places, and persons; and in manners and morals. The details are virtually without end. They all have names, limits, types, and subcategories. For example, take the agricultural products of Argentina. They are confusingly varied and numerous. The pupil can be helped to sort them out in terms of the climates in which they are grown, so they won't seem so jumbled and can be memorized more easily: timber in the north, vineyards in the dry west, cereal and livestock in the broad pampas; sheep in the cool, wind-swept south. This kind of sorting out and arranging catalogues and clarifies the many items, placing them neatly for the child's easier assimilation. It should always precede memorization. The mere struggle of transmuting chaos into order will in itself contribute mightily to mastery.

Despite life's unpredictability and surprises—of which the young child is aware—man's universe and man's creations, and even man's behavior, have considerable consistency and order. Each teacher should regard it as one of his first tasks to help the child build a framework for holding familiar facts and experiences and for use in arranging and interpreting fresh experience as he encounters it.

Teach the child how self-recitation can aid him in mastering subject matter

The key to mastery is self-recitation. Any reproduction of material may be called recitational: summarizing to oneself the contents of a passage just read; taking notes on a passage; memorizing a passage verbatim; reviewing a passage to oneself at odd moments during the day; going over the main headings of a passage (or over one's notes, for that matter) and telling oneself the important information contained under each heading, followed by checking with book or notes, as the case may be.

Taking notes while reading is an exceptionally fruitful form of self-recitation and provides the child with something of an outline which he can use later in still a different form of self-recitation. However, taking notes is exceedingly difficult for elementary school pupils. Many pupils simply do not know what to record. Training should begin in the first grade. A teacher of this grade can have his pupils start in rudimentary fashion by cooperatively dictating to the teacher from something they have read or heard or otherwise experienced. The teacher writes on the chalkboard what is dictated and presents it next day to the class for reading. Such reading is a form of reciting. An example of one day's chart follows.

> We watched workers make a sidewalk.
> Concrete poured from a dump truck.
> The men smoothed it with rakes and trowels.
> They said it would not be hard till next day.

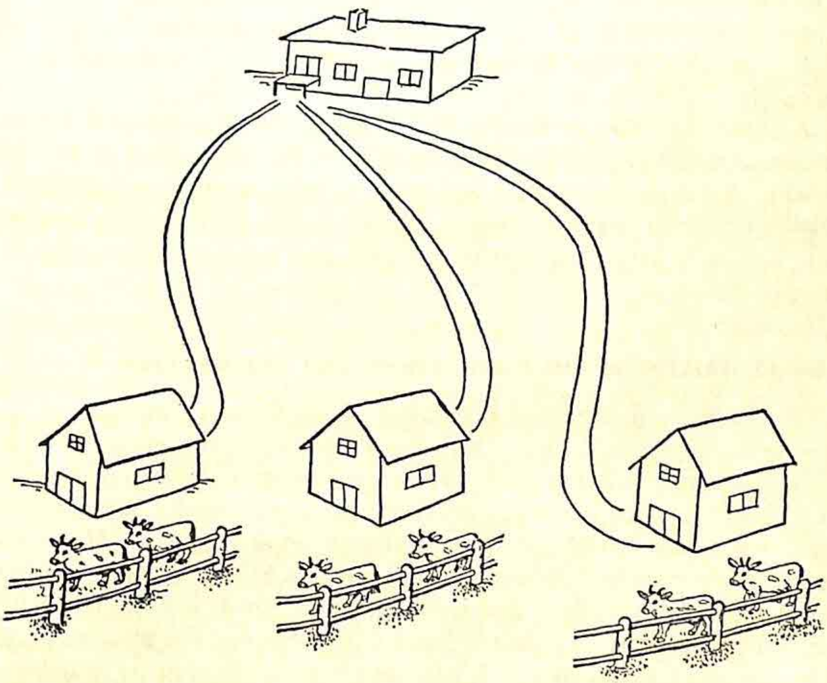
Thus, the pupils learn to recall an experience and to make a digest of it.

Later in the year the teacher may call upon individual children to tell of something they have read. He writes on the chalkboard phrases of the main ideas of the report to indicate the sequence of ideas. Other children, with the help of the teacher, can then practice using these notes to retell the report. Thus, children learn to *study* a set of notes (written down by someone else) before trying their hands at *making* notes.

In the following years children can take notes for oral or written reports by independently jotting down names, explanations, dates, and other needed information from their reference books. They should learn that anything copied which consists of more than key words or phrases must be enclosed by quotation marks, followed by the name of the author and the title and date of the publication from which it was taken. Teachers should discourage children from the practice of copying whole sentences or passages, even when credit is given, as a substitute for taking notes in their own words. At any cost, they should never be permitted to form the notion that a passage copied from a reference book, without credit, is an acceptable report of their search for information. I have seen such copies, in childish but well-formed handwriting, on classroom bulletin boards, with gold stars and commendatory words by the teacher across the top! Even if a pupil uses quotation marks and gives his sources, he should never get the idea that verbatim copying is all he needs to do when gathering information.

Skill in jotting down key words and phrases in one's own words develops slowly. The pupil can first try reading a passage and then writing a summary of it in his own words. He might begin with a passage in a book on water transportation, headed "Shipping on the Great Lakes." After reading the section, he closes the book, recites orally to himself, and then recites in writing some such note as this: "Before the building of the St. Lawrence Seaway, most of the ships on the Great Lakes carried iron ore which was mined in Minnesota. Today, however, ships carry goods from all over the world to the Great Lakes ports."

When material is difficult to recite, the teacher can show pupils how to make diagrams to help them in such instances. An illustration of such teacher-made diagrams, which attempts to show that a certain local dairy receives milk from three farms, follows:



Simple drawings should be encouraged as helpful devices in self-recitation.

Provide the pupil with drill for the purpose of making certain responses automatic

Drill, or repetitive practice (oral or written), is for the purpose of fixing responses at an automatic level to assure immediate recall. The usefulness of automatic responses is obvious in many life activities—in adding a column of figures, in spelling a word, in identifying the capital of a state, and in motor skills, such as riding a bicycle and playing tennis. Every school subject has relationships which should be learned until they become automatic. Some of them are logical in nature, as in arithmetic; others are arbitrary, as in the spelling of certain words and in certain aspects of political geography. In any case, teachers should introduce oral and written drill and continue these exercises until they bring the desired responses to a habitual level.

Drill should be well motivated. There should be some understanding of the drilled material—a knowledge of its utility or of the rationale that lies behind it. Before a child is drilled on the multiplication table, or at least while he is being drilled, he should learn, for example, that $3 \times 4 = ?$ means "How many are three fours?" and that the answer can be supplied by counting or by column addition. By way of another example, before drilling or during drilling upon the spelling of the word "knight," the child learns the usefulness of adding a "k" to distinguish it from "night."

Another condition of fruitful drill is that it be accompanied by an abundance of self-recitation. If a verse is to be memorized, it should first be read a number of times to oneself to bring about familiarity and as high a degree of understanding as possible. If a word is to be spelled at an automatic level, there may need to be considerable practice in writing it.

ASSURING MASTERY AT THE HIGH SCHOOL AND COLLEGE LEVEL

It has been unfortunate that some educators have minimized the importance of remembering! One of my instructors in college told his classes that it isn't so important for us to know an item of information, that it is sufficient to know in what source the item can be found. Since knowledge is vast, there is a certain amount of sense to this remark. However, it is extremely important for everyone who wishes to be a success, whether student or adult, to have a ready grasp of data which is essential to his work. The salesman who doesn't have at his fingertips information about his merchandise would have a hard time answering customers' questions without awkwardly having to look it up. A librarian without a similar grasp of important titles in his library, a tax consultant ignorant of income tax laws, an insurance agent without the facts of insurance in his head, a housewife who had to look up the routines of housekeeping in a book each morning, and the student lacking the essentials of the subjects he is pursuing—all of these would be failures in their work.

The examination system of our schools and colleges places the student on his mettle. Also, his future career may hinge on his ability to remember well. Loss of even a few details may seriously handicap him. Suppose that in a history examination he was asked to discuss the reconstruction period following the Civil War. If he forgot that the war ended in 1865 and that Lincoln was succeeded in the White House by Johnson, he would have a hard time convincing his instructor of his command of the subject matter of the reconstruction period. Remembering relevant detail always adds power and confidence to the student and to men and women in any walk of life. In business, professional, and government work, the necessity of learning and remembering both general concepts and details is essential, obviously.

There is much that we can do for students who distrust their memories or who have simply never learned to exercise them effectively in schoolwork. The instructor's help at this point of the study process is as crucial as at any other stage.

Give information concerning the nature of the remembering-forgetting process

Students are inclined to think of memory as a God-given ability which is tied up with intelligence and which they can do nothing about. Teachers of high school and college students should persuade them that there is much that everyone can do to improve his memory.

Students should be reminded that if they are interested in a subject, they can remember it better than if they are not interested. If a subject, say chemistry, appears of little interest to them, they can *cultivate* an interest in it by thinking of its importance and by finding aspects of it that can help them, directly or indirectly, to understand everyday things in their environment in which they *are* interested. Perhaps some of these might be the use of insecticides, the souring of milk, the brewing of beer, or the making of nylon and other manufactured fibers.

Students should learn, further, that if they understand a thing, it is much easier for them to remember it than it is if their understanding is sketchy. To demonstrate this, they need only compare the time it takes them to memorize a well-understood mathematical formula with the time it takes them to memorize a poorly understood formula.

Since time is a precious commodity to most students, they are pleased to know that they will save time in mastering the material if they learn by first becoming acquainted with the total structure of the material to be memorized, before drilling themselves upon details. This applies to such diverse matters as poems, the periodic chart of the elements, and the major points in a chapter.

All students should be acquainted with the fact that, if they spread their study of the material to be remembered over several sessions, they will retain it better than if they try to cram all their study of it into one period. Moreover, in order to remember an assignment with maximum accuracy and permanence, they should "overlearn" it—that is, they should not be satisfied with initial mastery but clinch mastery by continuing to drill themselves upon the material as much as they can. Another fact-clincher that students should know about is recitation. After reading each section of a chapter, they should stop and try to recall what they have learned. (See the discussion of self-recitation on pages 43–45.)

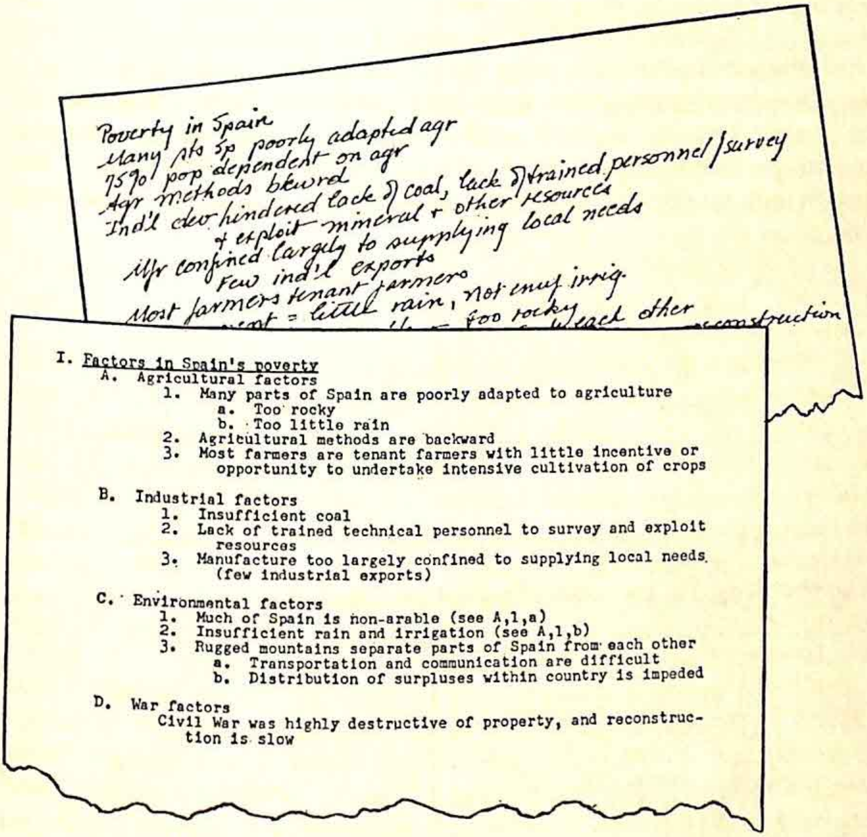
Give tips on how to take notes

When a student takes notes during his reading or at a lecture, he is reinforcing his learning. As previously pointed out, it is a form of self-recitation. When he sits back at his study desk with notes in hand and goes over them, reciting from them, he is further reinforcing his learning. The importance of note taking in the learning process cannot be overemphasized.

Many students are inept note takers. Their reading notes often approach in bulk the books from which they were taken, almost verbatim. Such notes are worthless.

The student must realize that notes, to be useful, should represent a condensation of the material on which they are taken. That is, they should be brief. The student should be encouraged to prepare notes taken during reading while he *previews* a book or a chapter (see pages 31–32). On most material, a student should aim at confining the notes on a chapter to one page. (He will find for review purposes that a single sheet is easier to use than several pages containing a plethora of details which are not too well sorted out.) While previewing, he jots down the main topics of the chapter on a sheet of notebook paper, allowing space between entries to be filled in later with his notes. Then the filling in of the outline should be done, immediately following the reading of each section. Notes should be rigorously selective, including only the more significant points. The instructor should stress simplicity and brevity in note taking. Notes are not meant to carry the burden of material to be remembered: their purpose is to offer cues to key ideas and key facts. Nothing should be recorded until and unless it is understood. To make sure of this, the student should try to rephrase the main idea of a passage in his own words, rather than in those of the author.

Instruction should also be given on how to take lecture notes. A good set of lecture notes is one of the best sources of review for an examination. Students usually have more difficulty in taking good lecture notes than good reading notes. The reason is simple: listening is a difficult skill. One must adapt himself to the speaker's pace, not to his own pace, as he does in reading. The words are fleeting, with no opportunity for critical rereading. Previewing, as done in reading, is, of course, out of the question. Students may need practice in listening to a lecture for the purpose of trying to analyze it in terms of its central ideas and important details. A convenient form of practice is to have one student read an unfamiliar article, editorial, or other brief unit of writing while other students take notes. Each student should develop his own system of shorthand. For example, I use "imp" for "important," "dif" for "difficult," and many symbols from shorthand, which I learned in my teens.



Poverty in Spain
Many pts Sp poorly adapted agr
75% pop dependent on agr
Agr methods bkwrd
Ind'l dev hindered lack of coal, lack of trained personnel/survey
+ exploit mineral + other resources
Mfr confined largely to supplying local needs
Few ind'l exports
Most farmers tenant farmers
ent = little rain, not enuf irrig.
too rocky each other construction

I. Factors in Spain's poverty
A. Agricultural factors
1. Many parts of Spain are poorly adapted to agriculture
a. Too rocky
b. Too little rain
2. Agricultural methods are backward
3. Most farmers are tenant farmers with little incentive or opportunity to undertake intensive cultivation of crops

B. Industrial factors
1. Insufficient coal
2. Lack of trained technical personnel to survey and exploit resources
3. Manufacture too largely confined to supplying local needs (few industrial exports)

C. Environmental factors
1. Much of Spain is non-arable (see A,1,a)
2. Insufficient rain and irrigation (see A,1,b)
3. Rugged mountains separate parts of Spain from each other
a. Transportation and communication are difficult
b. Distribution of surpluses within country is impeded

D. War factors
Civil War was highly destructive of property, and reconstruction is slow

A student's original lecture notes (above) should be revised shortly after each lecture in a form suitable for future use (below).

Remind your students that lecture notes should not be allowed to grow cold without complete revision. Most notes taken on the spot are apt to contain illegibilities, gaps arising whenever the listener falls behind the speaker, and illogical arrangements because of repetitions, flash backs, and corrections by the lecturer. Not only does revising a set of notes provide a more usuable and legible page for future use; also in the process of revision the student forces himself to rethink the content and its organization, a kind of review that often results in clearer understanding and more permanent retention.

Suggest the preparation of drill materials to aid memorization

Every subject possesses content which must be mastered "cold," i.e., flawlessly memorized and available for immediate use. Well-conceived drill materials can be of great assistance in bringing content to this level of mastery. Space will permit description of only a few types among many which students find useful.

One device is the flash card, a favorite for generations. Students can make their own set of flash cards from 3-by-5-inch index cards. In mastering a vocabulary list or phrases from a foreign language, place the foreign term on one side of a card and its English equivalent on the other side, as in the following example:

moyen âge	middle ages

For chemistry, the two sides of a card may read as follows:

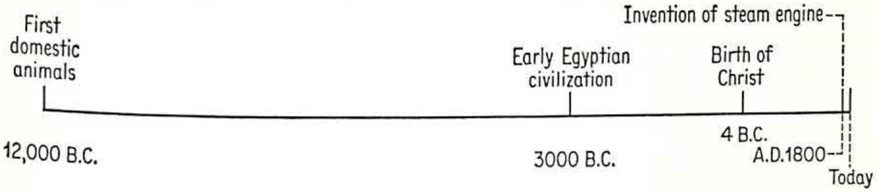
calcium	atomic weight: 40.08

For the history of art, an important artistic achievement can be matched with its date in the following manner:

Picasso's "La Tragédie"	1903

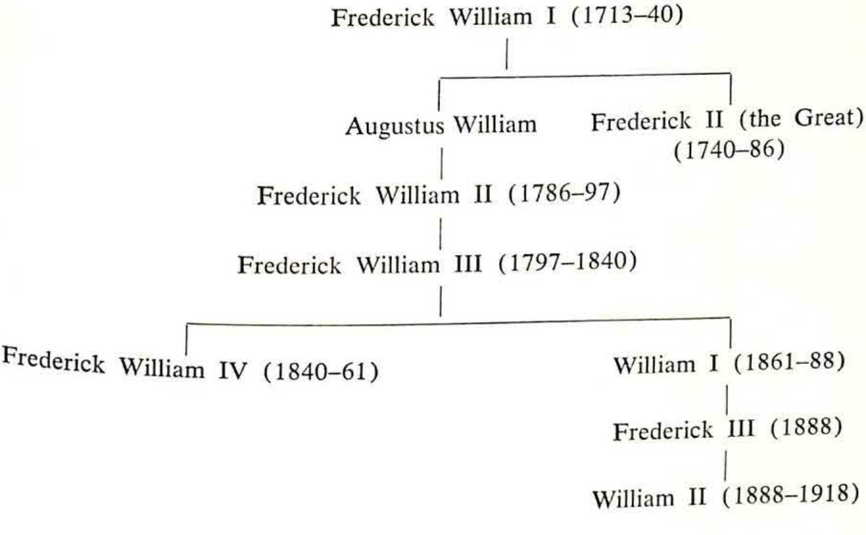
When drilling himself with flash cards on the facts in a course, the student takes a stack of prepared cards with, say, the side containing the name of the chemical element, facing him. After telling himself the atomic weight, he flips the card over as a check. The cards that he misses go in a special pile for further study and drill.

Time lines are easily constructed and can be helpful in mastering details of chronology. An example follows:



Familial relationships can be mastered with comparative ease when placed in chart form, as follows:

THE HOHENZOLLERN FAMILY


Frederick William I (1713–40)
Augustus William
Frederick II (the Great) (1740–86)
Frederick William II (1786–97)
Frederick William III (1797–1840)
Frederick William IV (1840–61)
William I (1861–88)
Frederick III (1888)
William II (1888–1918)

Teach the student how to make intelligent preparation for examinations

Examinations and review for examinations at a term's end play a definite role in the student's mastery of his subjects. The student needs to set up an examination study schedule running for at least a week prior to the examination period. He should plan to spread his study for *any given subject* over two or three separate study sessions.

In these sessions he should go over all his reading notes and lecture notes and correlate them, either through reflection or by constructing a sort of master outline. If there are points about which he is not sure, he should reread the relevant sections of his textbook. He should also plan to construct examinations for himself in each subject, using both essay questions, which require written discussion, and objective items, i.e., true-false, multiple choice, matching, and sentence completion. The task of creating examinations which are thorough and balanced in their covering of the subject matter is itself a good review exercise, calling for hard thinking. Finally, the student should take his own "examination" within self-imposed time limits. This will give him further practice in organizing his thinking of the subject and in working under the pressure of time which is present in most examinations.

Of course, the best way a student can prepare for examinations is by consistent day-by-day preparation throughout the term. The instructor can make this apparent by judging a student's progress, not only upon examination results, but also upon his daily display of interest in and understanding of the subject.

Conclusion

In this pamphlet I have set forth what seems to me to constitute the essentials of a program for improving study skills. I have attempted to show that good study skills rest on attitudes toward work and on a sense of responsibility; that these attitudes are formed early in life; and that teaching good study habits must, therefore, begin at an early age—well before the child encounters formal study requirements.

I have also tried to emphasize that *all* teachers must be alert to the need for building sound study skills and habits if we are to have general improvement in study performance. This means, in high school and college, instructors in the humanities, the natural sciences, the social sciences, and the practical arts as well as the English instructor, who has traditionally given attention to this area. Since each field has its peculiar study problems, we cannot count on transfer of study skills from one subject to another.

It should be apparent to the careful reader that what I am proposing is more than teaching mere tricks of the trade. The fundamental purpose of all instruction in study techniques is to bring about in students a renewed respect for intellectual life, for scholarship, and for books, and a fresh regard for the serious obligations of their role as students. Any school or college seriously devoted to teaching the attitudes, skills, and habits discussed in this pamphlet can expect eventually to experience a renaissance of scholarship within its halls.

For Further Reading

Blake, Walter S., Jr. "A Basic Study Skills Program for Colleges and Universities," *Junior College Journal,* 26:164–167 (November, 1955).
Describes diagnostic and instructional services, procedures, and materials constituting a program for college students.

Burrows, Alvina Treut. "Reading, Research, and Reporting in the Social Studies," in *Social Studies in the Elementary School,* ch. 8. Fifty-sixth Yearbook of the National Society for the Study of Education, Pt. II. Chicago: The University of Chicago Press, 1957.
Indicates the role of the teacher in introducing elementary school children to critical reading, reference reading, note taking, research activities, and written and oral reporting.

Flemming, Cecile White, and Grace L. Aldrich. "The Development of Study Skills and Work Habits in the Horace Mann School," *Teachers College Record,* 44:43–448 (March, 1943).
Describes a classic and successful attempt at a closely coordinated, systematic program for teaching study skills from first grade through high school.

Gray, William S. "Reading as an Aid in Learning," in *Reading in the Elementary School,* ch. 11. Forty-eighth Yearbook of the National Society for the Study of Education, Pt. II. Chicago: The University of Chicago Press, 1949.
Analyzes reading as an aspect of the study process in the elementary school.

Heffernan, Helen, et al. *Guiding the Young Child.* Boston: D. C. Heath & Company, 1951.
Deals explicitly with how to stimulate and guide intellectual interests in kindergarten.

Kelner, Bernard G. *How to Teach in the Elementary School.* New York: McGraw-Hill Book Company, 1958, pp. 141–143.
Suggests how to help children schedule their work and how to attack various kinds of assignments.

Laroe, Willetta R. "How to Study," *Grade Teacher,* 71:56 (September, 1953).
Describes a study plan which was developed cooperatively by an eighth-grade teacher and her class.

Preston, Ralph C., and Morton Botel. *How to Study.* Chicago: Science Research Associates, 1957.

Develops a procedure for mastering content and contains exercises for the high school student in applying the procedure to his study assignments.

Russell, David H. *Children Learn to Read.* Boston: Ginn and Company, 1949, ch. 11.

Presents materials, devices, and procedures in teaching study skills to elementary school pupils.

Strang, Ruth. "An Introspective Approach to Study Problems," *Journal of Educational Research,* 5:271–278 (December, 1957).

Analyzes hundreds of compositions written by children and youth from fifth-graders to college sophomores on "What makes studying easy or difficult for me?"

Traxler, Arthur E. *The Improvement of Study Habits and Skills.* Rev. ed. New York: Educational Records Bureau, 1954.

Summarizes the elements of study and describes available materials for the use of high school teachers in their teaching of study habits and study skills.

Valdina, William F. "Understanding Your Child's Study Habits," *Understanding the Child,* 22:79–80 (June, 1953).

Considers the importance of a satisfactory emotional life as a factor in the good study performance of high school students.

Xavier, Sister Mary. "Developing the Scholar through Effective Methods of Study," *School Review,* 63: 486–488 (December, 1955).

Describes an approach to helping high school students improve their study procedures.

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